

SUPPORT FOR THE AMENDMENTS

This Amendment cancels Claim 4; and amends Claims 1, 3, 6 and 10-13. Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claim 1 is found in canceled Claim 4. Additional support for Claim 1, and support for Claim 11, is found in the specification at least at page 7, lines 3-5; and page 8, lines 9-11. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-3 and 5-13 will be pending in this application. Claims 1 and 11 are independent.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

The present invention provides a thermoplastic resin composition that has excellent reflectance and thermal stability in residence during molding into large products. Specification at page 2, lines 23-25. The thermoplastic resin composition comprises specific amounts of a thermoplastic resin and coated titanium oxide particles. The thermoplastic resin contains a polycarbonate-type resin. The coated titanium oxide particles contain only small amounts of metal cations and comprise titanium oxide whose surface is coated with a hydrous oxide and/or an oxide of at least one metal selected from the group consisting of aluminum, silicon, zirconium, tin, cerium, titanium and zinc. Specification at page 2, line 22 to page 3, line 14.

Claims 11-13 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,695,906 ("Hiew").

Applicants respectfully request that the Examiner cite Hiew on a Form PTO-892.

Hiew discloses titanium dioxide pigment formed by coating titanium oxide particles with silica and alumina. Hiew at, e.g., column 6, line 49. Hiew discloses that the titanium dioxide pigment is washed substantially free of soluble salts adhering to the pigment, dried and then subjected to final comminution. Hiew at column 6, lines 49-63. Thus, Hiew discloses that after washing and drying, titanium oxide particles are produced.

In contrast, according to the present invention, after washing and drying, titanium oxide particles are cleaned using pure water, where the cleaning operation is repeated five times to prepare the coated titanium oxide particles featured in independent Claim 11. Specification at Examples 1-8, e.g., page 15, lines 11-19.

Hiew fails to suggest that Hiew's comminuted particles are cleaned using pure water. Thus, Hiew fails to suggest the "[c]oated titanium oxide particles" of independent Claim 11 where "the coated titanium oxide particles contain alkali metal cations that can be extracted to pure water and alkaline-earth metal cations that can be extracted to pure water in a total amount of 120 mass ppm or lower". If the total amount of the metal cations extracted to pure water is more than 120 mass ppm, thermal stability in residence during molding lowers substantially, when the coated titanium oxide particles and a thermoplastic resin (especially polycarbonate) are the main ingredients of the thermoplastic resin composition being molded. Specification at page 8, lines 11-14.

Because Hiew fails to suggest all the limitations of independent Claim 11, the rejection over Hiew should be withdrawn.

Claims 11-12 are rejected under 35 U.S.C. § 103(a) over GB 1,179,171 ("Werner"). Werner discloses titanium dioxide pigments comprising titania particles coated with silica. Werner at title; page 2, lines 127-128. Werner discloses that alumina can be mixed with the silica coated titania particles to form pigment. Werner at page 4, lines 39-40. Werner

discloses that after washing and drying the pigment, the dried pigment is ground. Werner at page 4, lines 93-123.

However, Werner fails to suggest that Werner's ground pigment particles are cleaned using pure water. Thus, Werner fails to suggest the "[c]oated titanium oxide particles" of independent Claim 11 where "the coated titanium oxide particles contain alkali metal cations that can be extracted to pure water and alkaline-earth metal cations that can be extracted to pure water in a total amount of 120 mass ppm or lower". As discussed above, if the total amount of the metal cations extracted to pure water is more than 120 mass ppm, thermal stability in residence during molding lowers substantially, when the coated titanium oxide particles and a thermoplastic resin (especially polycarbonate) are the main ingredients of the thermoplastic resin composition being molded. Specification at page 8, lines 11-14.

Because Werner fails to suggest all the limitations of independent Claim 11, the rejection over Werner should be withdrawn.

Claims 11-12 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 3,329,484 ("Long").

Applicants respectfully request that the Examiner cite Long on a Form PTO-892.

Long discloses a method for preparing titanium dioxide pigment. Long at title. Long discloses that Long's "TiO₂ product can be coated with alumina and/or silica as is commonly practiced in the art". Long at column 3, line 75 to column 4, line 2.

However, Long fails to suggest that independent Claim 11 limitations that "the coated titanium oxide particles contain 80 to less than 97 mass % of titanium oxide".

In addition, Long fails to suggest the independent Claim 11 limitations that "the coated titanium oxide particles contain alkali metal cations that can be extracted to pure water and alkaline-earth metal cations that can be extracted to pure water in a total amount of 120 mass ppm or lower".

Because Long fails to suggest all the limitations of independent Claim 11, the rejection over Long should be withdrawn.

Claims 1-10 are rejected under 35 U.S.C. § 103(a) over U.S. Patent Application Publication No. US 2005/0170180 A1 ("Kawa").

Kawa discloses a thermoplastic resin composition comprising 0.001 to 10 wt%, based on the total resin composition, of a glass filler whose glass formulation consists mainly of a silicon oxide composition. Kawa at abstract. Kawa discloses that the thermoplastic resin can be a polycarbonate resin. Kawa at [0027].

Kawa discloses that the glass filler can have a core/shell structure with a titanium dioxide core and a silica coating. Kawa at [0042]. Kawa discloses that in the glass filler, the proportion of the silicon oxide composition is usually from 30 to 99.99 mol% as the proportion of silicon to the total of positive elements. Kawa at [0037]. Thus, Kawa's glass filler with a titanium dioxide core and a silica coating will contain less than 0.01 to 70 mol% of titanium dioxide, i.e., less than 0.013 to 75.6 mass% of titanium dioxide (note that the molecular weight of silica is 60.08 g/mol and the molecular weight of titanium dioxide is 79.90 g/mol; $0.013 \text{ mass\% TiO}_2 = (100) (0.01)(79.90)/[(99.99)(60.08)+(0.01)(79.90)]$; and $75.6 \text{ mass\% TiO}_2 = (100) (70)(79.90)/[(30)(60.08)+(70)(79.90)]$).

However, Kawa fails to suggest the independent Claim 1 limitations that "the coated titanium oxide particles contain 80 to less than 97 mass % of titanium oxide".

In addition, Kawa fails to suggest the independent Claim 1 limitations that "the coated titanium oxide particles contain alkali metal cations that can be extracted to pure water and alkaline-earth metal cations that can be extracted to pure water in a total amount of 120 mass ppm or lower".

Because Kawa fails to suggest all the limitations of independent Claim 1, the rejection over Kawa should be withdrawn.

Claims 1-13 are rejected under 35 U.S.C. § 112, second paragraph. To obviate the rejection, Claims 1 and 11 are amended to recite "the coated titanium oxide particles contain 80 to less than 97 mass % , ~~excluding 97 mass %~~, of titanium oxide ~~ingredient~~ ...".

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Corwin P. Umbach, Ph.D.
Registration No. 40,211